Burns Interagency Fire Zone
Fire Danger Operating and Preparedness Plan
2010

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Approved by [signature] Date 6/1/10
District Manager

Introduction:

The *Interagency Standards for Fire & Aviation Operations* 2009 requires each Agency to have a Fire Danger Operating and Preparedness Plan. This plan provides a method to calculate the preparedness and dispatch levels and provides guidelines for actions taken with specific preparedness levels.

This plan will help simplify the decision making process for Agency administrators, fire managers, dispatchers, agency cooperators and firefighters by setting planning and dispatch levels using break points (based on past fire history and weather).

The use of other factors including coordination with cooperators, other interagency partners, resource commitment, drought, fuel load and large or multiple fire activity must be considered in the decision making process in the final determination of the daily preparedness and dispatch levels.

Objectives

1. Provide a tool for agency administrators, fire managers, dispatchers, agency cooperators and firefighters to gauge fire danger ratings with the BIFZ.
2. Define fire danger rating areas with similar weather, fuels, topography and fire occurrence within the BIFZ.
3. Establish a fire weather monitoring network made up of Remote automated Weather Stations, (RAWS).
4. Determine fire business and adjective fire danger rating break points using the Weather Information Management System (WIMS), the National Fire Danger Rating System (NFDRS), Fire Family Plus software, and by analyzing historical climatological data and fire history.
5. Define roles and responsibilities in order to make fire planning decisions, manage weather information, provide meaningful weather forecasts, and properly brief fire suppression personnel.
6. Ensure that agency administrators, fire managers, cooperating agencies, private industry and the public are notified of the adjective fire danger ratings, Industrial Fire Precaution Levels (IFPL), local preparedness levels, and restrictions or closures.
7. Make recommendations to personnel outlining specific daily actions to take at each planning level.
8. Develop and distribute fire danger pocket cards to all personnel involved with fire suppression activities.

Roles and Responsibilities:

The BICC Center Manager or acting will be responsible for final determination of daily preparedness and dispatch levels. The plan will be reviewed annually and updated as needed by the Center Manager.
The BICC Center Manager is responsible for assuring annual and daily maintenance of all BIFZ station catalogs in the Weather Information Management System (WIMS).
The Remote Automatic Weather Station (RAWS) Depot located at the National Interagency Fire Center in Boise annually maintains the Remote Automatic Weather Station located within the BIFZ on a contractual basis. Annual maintenance visits are scheduled through the NIFC RAWS office.

The BIFZ Fire Ecologist is responsible for producing the Fire Danger Pocket Cards utilizing the Fire Family Plus software package.
The BIFZ Division FMO's have oversight of the Fire Prevention program on the Zone and provides assignments in conjunction with the BICC Center Manager, to the Fire Prevention Staff in posting identified IFPL, Closures, and Restrictions based on current and predicted fire risks.

Fire Weather:

The BIFZ is divided between 2 Fire Weather Zones. The Pendleton (PDT) office of the NWS services Zone 632 (North), and the Boise (BOI) serves Zone 636 (South). The Zones are roughly divided between US Hwy 20 running East & West through the Fire Management Area.
See web sites:
BOI **http://www.boi.noaa.gov/fwx.htm**
PDT **http://www.wrh.noaa.gov/pdt/forecast/fireWeather.php**

Operational Procedures:

NFDRS Outputs and Indices: The BICC Manager will ensure that fire weather observations from the 11 BIFZ Remote Automatic Weather Stations are entered into WIMS daily by 1430. The next days forecasted indices will be retrieved by 1600 and used in the determination of the preparedness, IFPL and dispatch level for the next day. Indices, IFPL and staffing levels will be announced during the reading of the afternoon weather forecasts.

The fire danger operating plan primarily concentrates on two of the National Fire Danger Rating System (NFDRS) many indices as described below:

Burning Index (BI) The BI is an estimate of the potential difficulty of fire containment as it relates to flame length at the head of the fire. The BI is scaled that BI/10 indicated predicted flame length in feet. BI is greatly affected by wind so it can fluctuate greatly from day to day. Within the BIFZ this is associated with NFDRS fuel model T.

Energy Release Component (ERC) is used for both the North and South Zone Firefighter Pocket Card (Appendix 3). ERC shows seasonal trends as the fuels dry and can be used as a drought indicator. Wind is not factored into ERC so it has a low variability and does not dramatically change from day to day. ERC is a good characterization of the state of fire season at any point in time. Within the BIFZ this is associated with NFDRS fuel model G.

Staffing and dispatch levels will be based on NFDRS outputs from Stations that display a high correlation to each other using relative humidity observations representing the North and South Zones. Relative fire danger across the broad landscape is best identified by utilizing a SIG group of these stations and averaging them over the entire Zone using the ERC. (See Appendix 1)

Industrial Fire Precaution Level (IFPL). The IFPL level will be calculated daily by BICC during closed season using the Region 6 Standardized excel spreadsheet designed to make the calculations based on the timbered fuel types indices from Antelope (353524), Crow Flat (353515), and Allison (353501) RAWS sites. IFPL ratings are in effect at the beginning of closed season. BICC will

calculate the IFPL for the Emigrant Creek Ranger District, Burns District BLM and Malheur National Wildlife Refuge, and will notify managers when changes in IFPL are pending.

Adjective Fire Danger Rating Description:

In 1974, the Forest Service, Bureau of Land Management and State Forestry organizations established a standard adjective description for five levels of fire danger for use in public information releases and fire prevention signing. For this purpose only, fire danger is expressed using the adjective levels and color codes described below.

Fire Danger Class and Color Code	Description
Low (L) (Green)	Fuels do not ignite readily from small firebrands, although a more intense heat source such as lightning may start fires in duff or punky wood. Fires in open cured grasslands may burn briskly a few hours after rain, but woods fires spread slowly by creeping or smoldering and quit in irregular fingers. There is little danger of spotting.
Moderate (M) (Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) (Yellow)	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are hit hard and fast while small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they burn in heavier fuels.
[redacted]	

The resultant adjective fire danger information will be used by agency personnel to maintain the awareness of public and industrial entities. The amount of interaction will depend on the magnitude of the adjective fire danger.

Adjective Fire Danger Rating Determination:

NFDRS processors automatically calculate the adjective class rating with the input of each days weather indicies. The adjective rating calculations are based on a combination of the outputs using the SIG group STAF, on the ground observations from field going staff, and consultation with our cooperators.

Fire Danger Area:

For the purpose of this plan the BIFZ is broken down into 2 Fire Danger Areas, generally split by US Hwy 20 and identified as "North Zone & South Zone".

Seasonal Severity:

When conditions/occurrence/risks occur during the fire season that exceed those used in the Fire Management workload analysis and planned workload, additional funding for severity needs may be appropriately requested.

Severity requests need to be formulated using data that reflects an analysis of such items as current and predicted long term weather conditions, current fuel loading, drought indices, seasonal trends of Fire Danger models through NFDRS, current fire behavior, fire occurrence, size and duration, success in initial attack, and others.

When analysis indicates a more severe season than local resources are capable of sustaining, requests for severity funding will be coordinated with the State Office/Regional Office, (SORO).

Firefighter Pocket Cards:

Pocket Cards will be distributed to all local and incoming firefighting resources, The BIFZ pocket card has been posted on the National Wildfire Coordinating Group web site:

South Zone BIFZ: http://famweb.nwcg.gov/pocketcards/burns_s.htm

North Zone BIFZ: http://famweb.nwcg.gov/pocketcards/burns_n.htm

See Appendix 3 for current pocket cards.

Preplanned Dispatch Matrix:

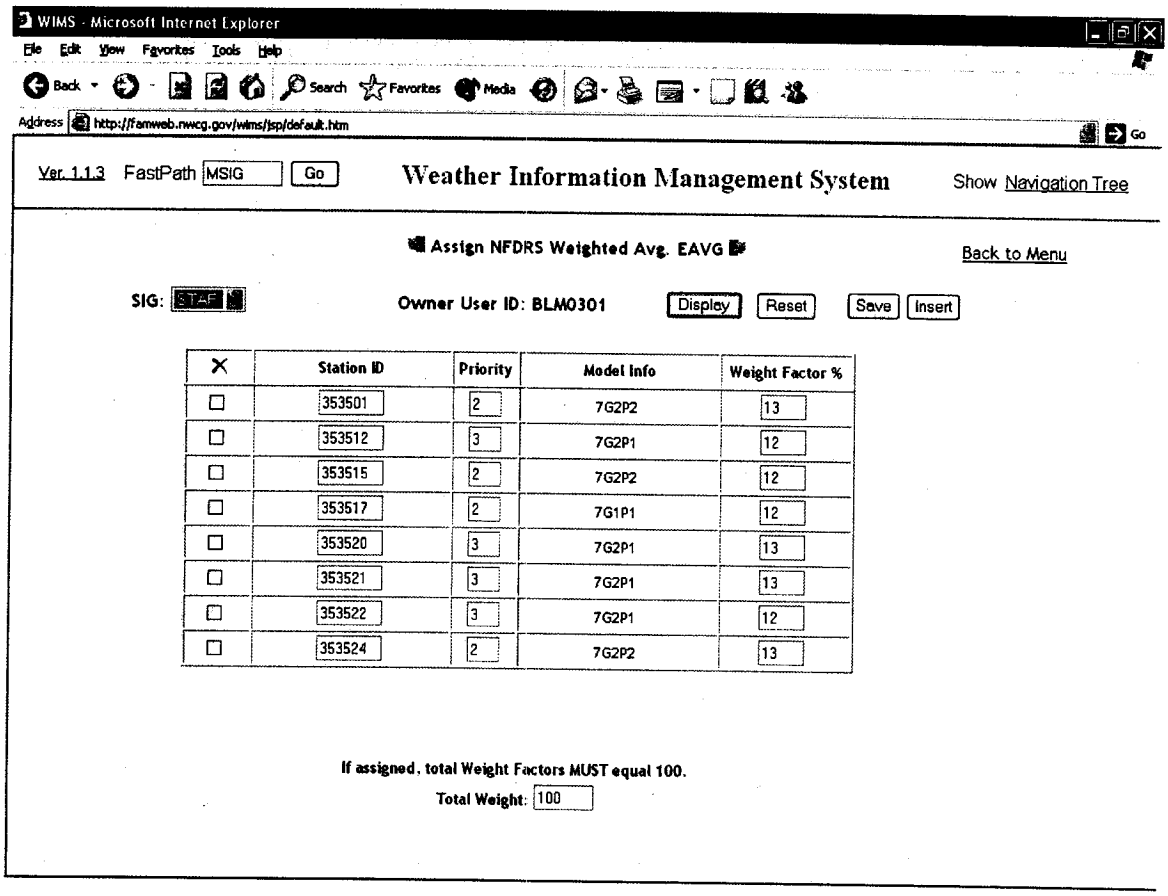
Appendix 4 displays the initial dispatched response by Fire Management Units, FMU's, for use when other Incident specific direction is not provided to BICC personnel. This is the Zones basic response to wildland fire.

Preparedness and Dispatch Level Matrix

STAFFING CLASS PREPAREDNESS LEVEL	ENERGY RELEASE COMPONENT Crow Flat	BURNING INDEX Basque Hills	FIRE DANGER	MANAGEMENT ACTIONS
PL-1	0 –16	0 –24	LOW Initiating fires low intensity with low resistance to control; fine fuels drying	•Normal tour of duty 0930 - 1800 •Phone & radio monitored by BICC until 1800 (or longer if initial attack is extended) •Prepare daily updates to the Fire recording phone •Daily Staffing reports required
PL-2	16 – 33	24 – 47	MODERATE Initiating fires moderate intensity with low-moderate resistance to control; heavy fuels drying	•Normal tour of duty 0930 - 1800 •Phone & radio monitored by BICC until 1800 (or longer if initial attack is extended) •Prepare daily updates to the Fire recording phone •Daily Staffing reports required
PL-3	33 – 65	47 – 95	HIGH Initiating fires of moderate to moderate-high intensity with potential for spotting w/winds & passive crowning possible; all fuel classes available at high end ERC	All Above Plus: •Consider increased patrols following dry lightning storms; •Predicted LAL between 4 – 6, bump up to LEVEL IV
PL-4	65 – 74	95 – 114	VERY HIGH Fires present moderate to high intensity and high resistance to control; escapes are common at high end ERC; all fuels classes available for rapid combustion; air temps high, humilities low with high winds possible; spotting & intermittent crowning likely	All Above Plus: •Briefings for Agency Administrators as needed; •Consider if extended staffing hours are appropriate; •Consider fire restrictions; fire safety messages distributed •Consider canceling planned Rx-fires and postponing project work
PL-5	74 +	114 +	EXTREME High to extreme intensities with crowning, short-long range spotting common; project fires likely	All Above Plus: •Consider: ordered-standby/cancel, annual leave, etc. •Consider daily Briefings for AA's and press releases issued regularly •Maintain coordination with local Fire Chiefs, County Fire Marshall

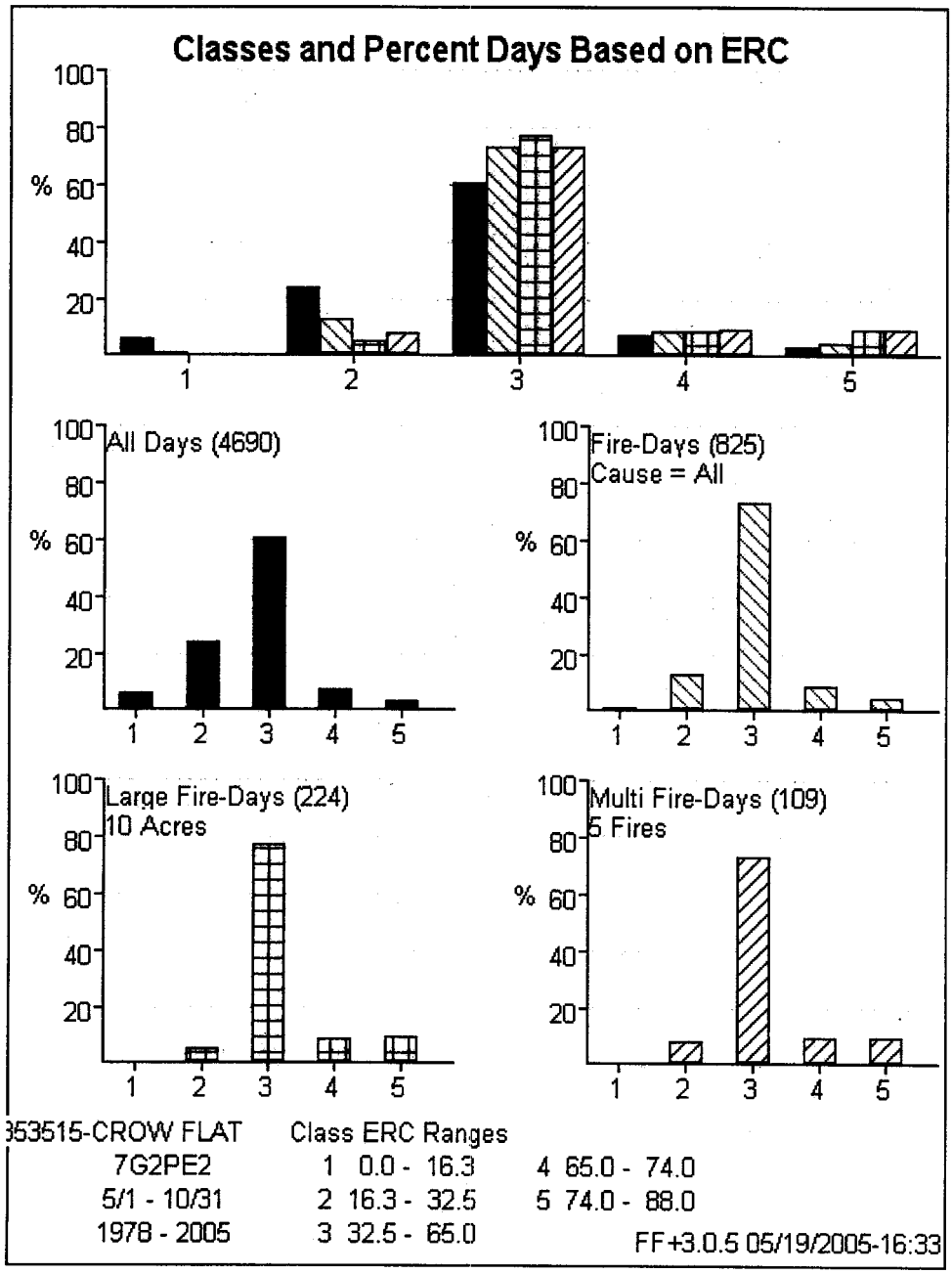
Based on the NFDRS Weather Stations 353515 data 1978 – 2004. Analysis used NFDRS Fuel Model C, Slope class 2 (26-40%), perennial herbs and climate class of 2 (semi arid). (Appendix 2 contains decision break point graphs)
Based on the NFDRS Weather Stations 353520 data 1990 – 2004. Analysis used NFDRS Fuel Model T, Slope class 2 (26-40%), perennial herbs and climate class of 1 (arid). (Appendix 2 contains decision break point graphs)

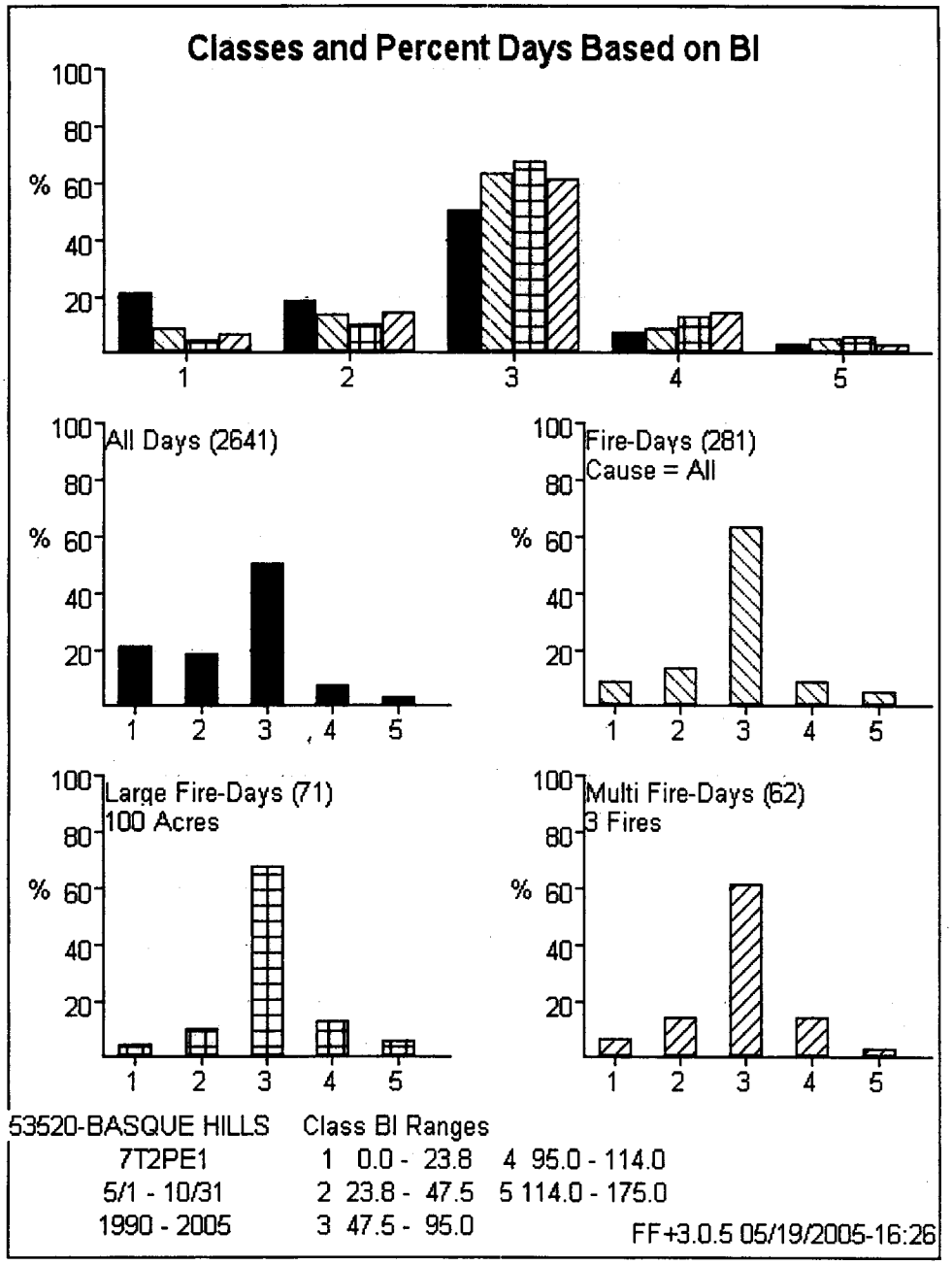
Appendix 1: WIMS Weather Station SIG Group for Staffing Determination



✕	Station ID	Priority	Model Info	Weight Factor %
☐	353501	2	7G2P2	13
☐	353512	3	7G2P1	12
☐	353515	2	7G2P2	12
☐	353517	2	7G1P1	12
☐	353520	3	7G2P1	13
☐	353521	3	7G2P1	13
☐	353522	3	7G2P1	12
☐	353524	2	7G2P2	13

Appendix 2: Decision Points



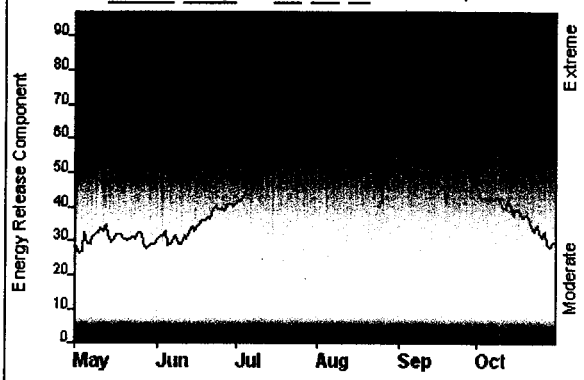

Classes and Percent Days Based on BI
100
80
% 60
40
20
1
2
3
4
5
All Days (2641)
Fire-Days (281)
Cause = All
Large Fire-Days (71)
100 Acres
Multi Fire-Days (62)
3 Fires
53520-BASQUE HILLS
7T2PE1
5/1 - 10/31
1990 - 2005
Class BI Ranges
1 0.0 - 23.8
2 23.8 - 47.5
3 47.5 - 95.0
4 95.0 - 114.0
5 114.0 - 175.0
FF+3.0.5 05/19/2005-16:26

Appendix 3: Pocket Cards

BIFZ North Zone

FIRE DANGER -- BIFZ PONDEROSA PINE

Maximum, Average, and 90th Percentile, based on 31 years data



Fire Danger Area:

- BIFZ FORESTED
- Weather Forecast Zone 632
- Crow Flat
  * Meets NWCG Wx Station Standards

Fire Danger Interpretation:

EXTREME -- Use extreme caution

[illegible] -- Watch for change

Moderate -- Lower Potential, but always be aware

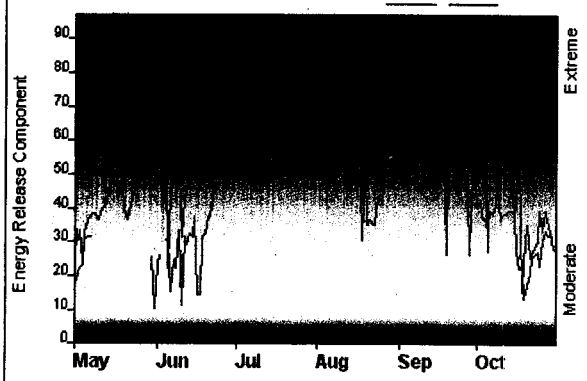
Maximum -- Highest Energy Release Component by day for 1978 - 2009

Average -- shows peak fire season over 31 years (5146 observations)

90th Percentile -- Only 10% of the 5146 days from 1978 - 2009 had an Energy Release Component above 66

Local Thresholds - Watch out: Combinations of any of these factors can greatly increase fire behavior: 20' Wind Speed over 10 mph, RH less than 25%, Temperature over 85, Energy Release Component over 66

Years to Remember: 1990 2007



Fuel Model: G - Short-Needle (Heavy Dead)

Remember what Fire Danger tells you:

- Energy Release Component gives seasonal trends calculated from 2 pm temperature, humidity, daily temperature & rh ranges, and precip duration.
- Wind is NOT part of ERC calculation.
- Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- Listen to weather forecasts -- especially WIND.

Past Experience:

Ponderosa Pine Forest - Surface fuels include grass, needles, sagebrush and pockets of light and heavy slash.

Western Juniper Cuts present large concentrations of debris. Be aware of cuts with red slash.

95% of fires >100ac occur on days with RH <25%

75% of fires >100ac occur at ERCs between 33-65

Responsible Agency: BICC/BIFZ

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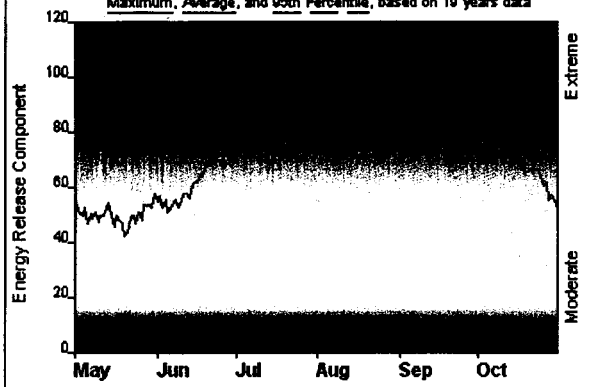
Design by NWCG Fire Danger Working Team

BIFZ South Zone

FIRE DANGER -- BIFZ SAGEBRUSH

Maximum, Average, and 95th Percentile, based on 19 years data



Fire Danger Area:

- BIFZ SAGEBRUSH/JUNIPER
- Weather Forecast Zone 636
- Basque Hills
  * Meets NWCG Wx Station Standards

Fire Danger Interpretation:

EXTREME -- Use extreme caution

[illegible] -- Watch for change

Moderate -- Lower Potential, but always be aware

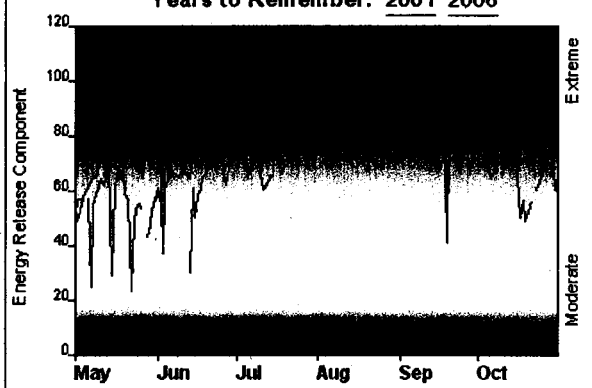
Maximum -- Highest Energy Release Component by day for 1990 - 2009

Average -- shows peak fire season over 19 years (3270 observations)

95th Percentile -- Only 5% of the 3270 days from 1990 - 2009 had an Energy Release Component above 99

Local Thresholds - Watch out: Combinations of any of these factors can greatly increase fire behavior: 20' Wind Speed over 15 mph, RH less than 21%, Temperature over 80, Burning Index over 40

Years to Remember: 2001 2006



Fuel Model: G - Short-Needle (Heavy Dead)

Remember what Fire Danger tells you:

- ☑ Energy Release Component gives seasonal trends calculated from 2 pm temperature, humidity, daily temperature & rh ranges, and precip duration.
- ☑ Wind is NOT part of ERC calculation.
- ☑ Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- ☑ Listen to weather forecasts -- especially WIND.

Past Experience:

Sagebrush vegetation varies considerably across the Zone. Indices represent worst case scenario. Sagebrush may be very dense to sparse. Western juniper cuts can be found along the forest fringe on the northern end of the zone and on the Stinking Water and Steens Mountains.

91% of all large fires and 89% of all fires have occurred at BI > 40.

Western juniper cuts present large concetrations of fuels. Be aware of cuts with red slash.

Responsible Agency: BIFZ/BICC

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Design by NWCG Fire Danger Working Team

Appendix 4: Preplanned Dispatch

FMU	Staffing Level				
	1	2	3	4	5
Alvord (East East Steens Road)	1 Engine	1 Engine	2 Engine FOS *Helicopter?*	2(6) Engine 1(4) Engine Helicopter FOS	2(4) Engines FOS Helicopter *Dozer?* *Tender?*
Alvrod (West East Steens Road)	1 Engine	1 Engine,	3 Engines Helicopter FOS.	2(6) Engine 2(4) Engines FOS. Dozer Helicopter *Tender?* *Hand Crew?* *READ?*	2(6) Engine 3(4) Engines FOS. Helicopter Dozer or *Tender?* *Hand Crew?* *Grader?* *READ?*
Diamond	1 Engine	2 Engines Helicopter FOS	3 Engines Helicopter FOS Dozer Tender *Hand Crew?* *SEAT?*	2(6) Engine 2(4) Engines FOS Helicopter SEAT Hand Crew Dozer Tender *Heavy AT?* *READ?*	2(6) Engines 3(4) Engines FOS Helicopter Hand Crew Dozer Tender SEAT *Heavy AT?* *READ?*
Guano	1 Engine	1 Engine	2 Engines FOS *Helicopter?*	2(6) Engines 1(4) Engines FOS Dozer Tender *Grader?* *READ?* *Helicopter?*	1(6) Engines 3(4) Engines FOS Helicopter SEAT Dozer Tender *Grader?*
Home Creek	Engine Crew READ *Helicopter?*	Helicopter READ *Jumpers?* *Rappellers?*	Helicopter READ *SEAT?* *Hand Crew?* *Jumpers?* *Rappellers?*	Helicopter READ *SEAT?* *Hand Crew?* *Jumpers?* *Rappellers?*	Helicopter READ *SEAT?* *Hand Crew?* *Jumpers?* *Rappellers?*

FMU	Staffing Level				
	1	2	3	4	5
Lakes	1 Engine	2 Engines Helicopter FOS	3 Engines Helicopter FOS Dozer Tender SEAT *READ?* *Hand Crew?*	2(6) Engine 2(4) Engines FOS Helicopter SEAT Hand Crew Dozer Tender *READ?* *Heavy AT?*	2(6) Engines 3(4) Engines FOS Helicopter Hand Crew Dozer Tender SEAT Heavy AT *READ?*
Silver	1 Engine	1 Engine	2 Engines Helicopter SEAT FOS *Dozer?* *READ?* *Tender?* *Grader?*	2(6) Engines 2(4) Engines FOS Helicopter SEAT Tender *Dozer?* *READ?* *Grader?*	2(6) Engines 3(4) Engines FOS Helicopter SEAT Dozer *Tender?* *READ?* *Grader?* *Heavy AT?*
Silvies	1 Engine	1 Engine	2(6) Engines FOS. Helicopter SEAT	2(6) Engines 1(4) Engines FOS Helicopter SEAT Dozer *Tender?* *READ?* *Jumpers?* *Rappellers?*	2(6) Engines 2(4) Engines FOS Helicopter SEAT Dozer *Tender?* *READ?* *Hand Crew?* *Heavy AT?* *Jumpers?* *Rappellers?*
Snow Mountain (North)	1 Engine	1 Engine	2(6) Engines FOS. Helicopter SEAT	2(6) Engines 1(4) Engines FOS Helicopter SEAT Dozer *Tender?* *Jumpers?* *Rappellers?* *READ?*	2(4) Engines 2(6) Engines FOS Helicopter SEAT Dozer *Tender?* *Hand Crew?* *Heavy AT?* *Jumpers?* *Rappellers?* *READ?*

FMU	Staffing Level				
	1	2	3	4	5
Snow Mountain	1 Engine	2(6)Engines FOS *Hand Crew?*	2(6)Engines FOS. Helicopter SEAT *Hand Crew?* *Tender?*	2(6)Engines 1(4)Engines FOS Helicopter SEAT Hand Crew Dozer or *Tender?* *Heavy AT?* *READ?*	3(6)Engines 2(4)Engines FOS Helicopter SEAT Hand Crew Dozer or *Tender?* *Heavy AT?* *READ?*
Steens	Engine Crew READ *Helicopter?*	Helicopter READ *Jumpers?* *Rappellers?*	Helicopter READ *Hand Crew?* *Jumpers?* *Rappellers?*	Helicopter READ *SEAT?* *Hand Crew?* *Jumpers?* *Rappellers?*	Helicopter READ *SEAT?* *Hand Crew?* *Jumpers?* *Rappellers?*
Thousand/Virgin	1 Engine	1 Engine	2 Engines Helicopter FOS	2(6) Engines 1(4) Engines FOS Helicopter Dozer *Tender?* *Helicopter?* *READ?*	2(6) Engines 3(4) Engines FOS Helicopter Dozer or *Tender?* *SEAT?* *Grader?* *READ?*
Upper Malheur	1 Engine	1 Engine	1(6)Engines 1(4)Engine FOS Helicopter SEAT *Dozer?* *Tender?* *READ?*	2(6)Engines 2(4) FOS Helicopter SEAT Dozer or *Tender?* *Hand Crew?* *Heavy AT?* *READ?*	3(6)Engines 2(4)Engines FOS Helicopter SEAT Hand Crew Dozer or *Tender?* *Heavy AT?* *READ?*